

REMARKS

Reconsideration of the present application in view of the above amendments and following remarks is respectfully requested. Claims 1-21 were pending. The Examiner has withdrawn claims 15-21, directed to non-elected subject matter. Claims 2, 4, 5, 18, and 20-21 have been cancelled without acquiescence to any rejection and without prejudice to prosecution of the cancelled subject matter in a related divisional, continuation, or continuation-in-part application. Claims 1, 3, 6, 7, and 10-17 have been amended. No new matter has been added. Support for the amendments can be found in the claims as originally filed and throughout the specification, for example, at page 10, lines 15-22 and at page 22, lines 7-16. Upon entry of these amendments, claims 1, 3, and 6-14 will be under examination.

Rejections Under 35 U.S.C. § 102(b)

(1) The Examiner rejected claims 1-6 and 11-12 under 35 U.S.C. § 102(b), alleging that the claims are anticipated by Enzmann et al. (*Graefe's Arch. Clin. Exp. Ophthalmol.* 238:985-92 (2000)). In particular, the Examiner asserts that the cited reference discloses a cell culture comprising mature retinal cells and human melanoma choroidal cells that allegedly are isolated from the ciliary body.

Applicants traverse this rejection and submit that Enzmann et al. fail to teach or suggest each feature of the claims. The cited reference fails to teach or suggest adding cells from a ciliary body to a retinal cell culture system. Instead, the cited document describes adding melanoma cells derived from the choroid, which is a part of the eye understood by persons skilled in the art to be distinct from the ciliary body.

As described in the specification and understood in the art, the ciliary body is a tissue that resides between the peripheral regions of the retina and the iris in the eye and includes the group of muscles that act on the eye lens to produce accommodation and the arterial circle of the iris. The inner ciliary epithelium is continuous with the pigmented retinal epithelium, and the outer ciliary epithelium secretes the aqueous humour (see, e.g., page 6, lines 10-12; page 10, lines 26-29). The choroid is a vascular layer that is located between the retina and the sclera and that connects with, but is anatomically distinct from, the ciliary body (see, e.g., *in The World's*

Best Anatomical Charts: Systems Structures (Anatomical Chart Company, Springhouse Corporation, 2000) page 18, enclosed for the Examiner's convenience). Furthermore, a person skilled in the oncology art distinguishes melanomas of the eye that originate in the choroid, ciliary body, or the iris (uveal melanomas). Accordingly, cells from a ciliary body do not include tumor cells derived from a choroid melanoma.

Applicants therefore submit that the present claims meet the requirements for novelty under 35 U.S.C. § 102 and respectfully request that this rejection be withdrawn.

(2) The Examiner rejected claims 1-14 under 35 U.S.C. § 102(b), alleging that the claimed subject matter is anticipated by Tropepe et al. (*Science* 287:2032-36 (2000)). Specifically, the Examiner asserts that Tropepe et al. disclose a retinal cell culture formed from a single pigmented cell of the ciliary margin (PCM) and that this cell is isolated from a ciliary body.

Applicants traverse this rejection and submit that the cited document fails to teach each feature of the currently pending claims. The present claims are directed, in pertinent part, to a cell culture system comprising a mixture of mature retinal neuronal cells wherein the mature retinal neuronal cells are isolated from retinal tissue, cells isolated from a ciliary body, and in certain specific embodiments, further comprises embryonic retinal cells. In a particular embodiment, mature retinal cells comprise a bipolar cell, a horizontal cell, an amacrine cell, a ganglion cell, and a photoreceptor cell.

Tropepe et al. fail to teach or suggest a cell culture comprising mature retinal cells, wherein the mature retinal cells are isolated from retinal tissue. By contrast, Tropepe et al., describe that certain retinal-specific cell types differentiate from a single pigmented ciliary margin cell, a cell that is not derived from retinal tissue. Furthermore, Tropepe et al. expressly state that the ciliary margin-derived cell cultures lack ganglion, horizontal, and amacrine cells (*see e.g.*, Tropepe et al., page 2034, third column, stating that "Differentiation of ganglion, horizontal, and amacrine cells was not observed under the conditions described above.").

Accordingly, the present claims meet the novelty requirements under 35 U.S.C. § 102, and Applicants respectfully request withdrawal of this rejection.

Furthermore, the cited documents, either alone or in combination, do not provide any teaching, suggestion, or motivation such that a person having ordinary skill in the art would reasonably expect to obtain successfully the subject matter of claims 1, 3, and 6-14, particularly when neither cited document discloses a cell culture system comprising mature retinal neuronal cells isolated from retinal tissue and cells isolated from a ciliary body.

Applicants submit that all claims in the application are allowable. Further, if the Examiner finds that the claims under examination are allowable, Applicants request that the Examiner rejoin claims 15-17 and 19, directed to related processes, with claims 1, 3, and 6-14.

Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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Enclosure:

The World's Best Anatomical Charts: Systems Structures (Anatomical Chart Company, Springhouse Corporation, 2000) page 18

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